

[FLASH MEMORY WITH SELF-ALIGNED SPLIT GATE AND METHODS FOR FABRICATING AND FOR OPERATING THE SAME]

Abstract

A flash memory with a self-aligned split gate and the methods for fabricating and operating the same are described. The flash cell consists of a substrate having a deep n-type well and a shallow p-type well in the deep n-type well therein, a control gate structure on the gate oxide layer located on the p-type shallow well, a floating gate on one sidewall of the control gate and over the substrate, a tunnel oxide layer between the control gate and the floating gate and between the floating gate and the substrate, a drain and a common source disposed beneath each side of the control gate in the substrate, wherein the depth of the drain and the common source are larger than the depth of the shallow p-type well, a pocket p-type well in the substrate around the drain and electrically connecting with the shallow p-type well..